REMARKS

In the present Amendment, Claim 1 has been amended to incorporate the subject matter of Claim 2. Claim 2 has been cancelled. Claims 3-5 and 8 have been amended to depend solely on claim 1. Claim 11 has been amended in a similar manner to claim 1. No new matter has been added, and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, Claims 1 and 3-11 will be pending.

In paragraph No. 2 of the Action, claims 1-4 and 8-10 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shimamura et al (US 6,090,505) in view of Ehrlich (US 2003/0064291).

In paragraph No. 3 of the Action, claims 5-7 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shimamura et al in view of Ehrlich, and further in view of Tsutsue et al (US 2002/0006548).

Applicant submits that the above two rejections should be withdrawn because Shimamura et al, Ehrlich and Tsutsue et al do not disclose or render obvious the present invention, either alone or in combination.

Present claim 1 as amended relates to a non-aqueous electrolyte secondary battery comprising a negative electrode with a composite layer containing a negative active material; a positive electrode; and a non-aqueous electrolyte. The negative active material is an alloy containing 5 to 25 mass% of nickel and 75 to 95 mass% of tin, and the alloy contains Sn_4Ni_3 phase and Sn phase. The content ratio of the Sn_4Ni_3 phase and the Sn phase in the alloy is $0.2 \leq Z \leq 3$ when m_1 is the mass of the Sn_4Ni_3 phase, m_2 is the mass of the Sn phase, and $Z = m_1 / m_2$.

In the Amendments filed August 22, 2008 and May 11, 2009, Applicant explained that the Sn phase of the present invention is different from the Sn_2Ni_3 phase of Shimamura et al, and that Shimamura et al does not teach or suggest that the alloy contains the Sn_4Ni_3 phase and the Sn phase, as required by the present claims.

In response, the Examiner states that the recitation as presented does note exclude a Sn phase made of a material including tin and other element, such as Ni_3Sn_2 described by the Shimamura reference.

However, the specification, at page 4, lines 4-10, discloses that "[i]n addition, in the above described alloy, crystalline phases or noncrystalline phases other than Sn_4Ni_3 phase and Sn phase may be contained; for example, the phases containing Sn and Ni such as Sn_2Ni_3 phase, Sn-Ni amorphous phase, etc., …," which disclosure clearly indicates that the Sn phase and the Sn_2Ni_3 phase are two different phases.

Applicant does not understand the Examiner's position and, therefore, respectfully request the Examiner to provide ground for his position that "the recitation as presented does not exclude a Sn phase made of a material including tin and other element, such as a Ni_3Sn_2 described by the Shimamura reference," because, as discussed above, the present specification clearly indicates that the Sn phase is different from the Sn_2Ni_3 phase. Persons skilled in the art understand this. With due respect, the Examiner's position is plainly incorrect.

Further, claim 1 as amended recites that the content ratio of the Sn_4Ni_3 phase and the Sn phase in said alloy is $0.2 \leq Z \leq 3$ when m_1 is the mass of the Sn_4Ni_3 phase, m_2 is the mass of the Sn phase, and $Z = m_1 / m_2$.

The Examiner cites claim 7 of Shimamura et al and states that Shimamura et al teaches that the content ratio of said Sn_4Ni_3 phase and said "Sn phase" in said alloy is $0.7 \leq Z \leq 19$.

However, the Examiner's logic is based on the premise that the Ni_3Sn_2 phase [phase A] in Shimamura et al corresponds to (or is identical to) the presently claimed Sn phase. However, as discussed above, the presently claimed Sn phase is a phase not containing other metals such as Ni and is a phase quite different from the Ni_3Sn_2 phase of Shimamura et al.

Since the Sn phase of the present invention and the Ni_3Sn_2 phase of Shimamura et al are phases quite different from each other as discussed above, the definition "mass ratio between phase A and phase B" disclosed in claim 7 of Shimamura et al does not suggest "mass ratio between Sn phase and Sn_4Ni_3 phase" of the present claims. Even if the Sn phase is formed in addition to the Ni_3Sn_2 phase and the Sn_4Ni_3 phase in the Ni-Sn phase diagram shown by the Examiner, Shimamura et al does not teach or suggest the presently claimed mass ratio between the Sn phase and Ni_4Sn_3 phase.

Still further, the present invention provides advantageous effects. The secondary battery of the invention is capable of making high capacity and life characteristics compatible by the coexistence of the Sn phase and the Ni_4Sn_3 phase and by defining the mass ratio between the Sn phase and the Ni_4Sn_3 phase, thereby decreasing the volume change during the charge and discharge processes by the Ni_4Sn_3 phase while maintaining high capacity of the Sn phase. See the Embodiments and Comparative Examples of the specification. Ni_3Sn_2 (phase A) of Shimamura et al provides lower capacity and cannot obtain the advantageous effects provided by the present invention.

Ehrlich is cited as teaching a negative electrode material comprising about 5 to 90 wt% nickel particles and about 10-95 wt% tin particles (abstract). However, Ehrlich et al does not teach or suggest the claimed mass ratio between the Sn phase and the Ni_4Sn_3 phase, either. Thus, Ehrlich does not make up for the deficiencies of Shimamura et al.

Tsutsue et al is cited as teaching a layer of electrode active material mixture having a porosity of 30 to 60% (abstract). Tsutsue et al does not make up for the deficiencies of Shimamura et al and Ehrlich.

In view of the above, reconsideration and withdrawal of the §103(a) rejections based on Shimamura et al, Ehrlich and Tsutsue et al are respectfully requested.

In paragraph No. 4 of the Action, claims 1 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kasamatsu et al (US 6,605,386) in view of Kajiura et al (JP 2001-143700).

As noted, claims 1 and 11 have been amended to incorporate the subject matter of claim 2. Claim 2 is not subject to this rejection. Accordingly, withdrawal of the §103(a) rejection based on Kasamatsu et al in view of Kajiura et al is respectfully requested.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: January 29, 2010